

## SEQUENCE LISTING

<110> Dolly, James Oliver  
O'Sullivan, Gregory A.  
Mohammed, Nadiem  
Foran, Patrick G.

<120> Isoforms of SNARE Molecules and the Uses  
Thereof in Modulation of Cellular Exocytosis Methods of  
Treatment

<130> 17790 (BOT)

<140> 10/049,967

<141> 2004-02-23

<160> 46

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<210> 1

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 1

agacggatac catggccgag gacgc

25

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<211> 30

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<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 2

agcatgaatt ctcaacgttg gttggcttca

30

<210> 3

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

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29

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<220>  
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<400> 4  
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<213> Artificial Sequence

<220>  
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<220>  
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<400> 6  
gatgaagcca accaaactgc aacaagatg ctggg 35

<210> 7  
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<220>  
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cccagcatct ttgttgca gt ttggttggt tatc 34

<210> 8  
<211> 27  
<212> DNA  
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<220>  
<223> PCR Primer

<400> 8  
gatgaagcca acgcacgtgc aacaaag 27

<210> 9  
<211> 35  
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<220>  
<223> PCR Primer

<400> 9  
cccagcatct ttgttgcacg tgcgttggct tcatc 35

<210> 10  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 10  
gatgaagcca accaagctgc aacaaagatg ctggg 35

<210> 11  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 11  
cccagcatct ttgttgcagc ttggttggct tcatc 35

<210> 12  
<211> 41  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 12  
ccagaattga tgaagccaac aaacatgcaa caaagatgct g 41

<210> 13  
<211> 41  
<212> DNA  
<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 13  
cagcatcttt gttgcatgtt tgttggttc atcaattctg g 41

<210> 14  
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<220>  
<223> PCR Primer

<400> 14  
gatgaagcca accaaactgc ataaaagatg ctgggaagtg gt 42

<210> 15  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 15  
accacttccc agcatctttt atgcagtttg gttggcttca tc 42

<210> 16  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 16  
gatgaagcca accaaactgc aacatagatg ctgggaagtg gt 42

<210> 17  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> PCR Primer

<400> 17  
accacttccc agcatctatg ttgcagtttg gttggcttca tc 42

<210> 18  
<211> 36  
<212> DNA  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; PCR Primer

&lt;400&gt; 18

gccaaccaac gtgcaacaaa gatgtaggga agtggt

36

&lt;210&gt; 19

&lt;211&gt; 36

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; PCR Primer

&lt;400&gt; 19

accacttccc tacatctttg ttgcacgttg gttggc

36

&lt;210&gt; 20

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide

&lt;400&gt; 20

Gln Arg Ala Thr Lys Met Leu Gly Ser Gly  
1 5 10

&lt;210&gt; 21

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide

&lt;400&gt; 21

Gln Thr Ala Thr Lys Met Leu Gly Ser Gly  
1 5 10

&lt;210&gt; 22

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide

&lt;400&gt; 22

Gln Arg Ala Thr Lys Met Leu  
1 5

<210> 23  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Peptide

<400> 23  
Gln Thr Ala Thr Lys Met Leu  
1 5

<210> 24  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Peptide

<400> 24  
Gln Arg Ala Thr Lys Met  
1 5

<210> 25  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Peptide

<400> 25  
Gln Thr Ala Thr Lys Met  
1 5

<210> 26  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Peptide

<400> 26  
Gln Arg Ala Thr Lys

1

5

&lt;210&gt; 27

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide

&lt;400&gt; 27

Gln Thr Ala Thr Lys

1

5

&lt;210&gt; 28

&lt;211&gt; 4

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide

&lt;400&gt; 28

Gln Thr Gln Thr

1

&lt;210&gt; 29

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide

&lt;400&gt; 29

Gln Arg Ala Thr Lys Ala Leu Gly Ser Gly

1

5

10

&lt;210&gt; 30

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide

&lt;400&gt; 30

Gln Thr Ala Thr Lys Ala Leu Gly Ser Gly

1

5

10

<210> 31  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Peptide

<400> 31  
 Gln Arg Ala Thr Lys Met Ala Gly Ser Gly  
 1 5 10

<210> 32  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Peptide

<400> 32  
 Gln Thr Ala Thr Lys Met Ala Gly Ser Gly  
 1 5 10

<210> 33  
 <211> 354  
 <212> DNA  
 <213> Homo sapiens

<400> 33  
 atgtctgctc cagctcagcc acctgctgaa gggacagaag ggactgcccc aggtgggggt 60  
 ccccttgccc ctctccttaa catgaccagt aacagacgac tacagcaaac ccaggcacia 120  
 gtggaggagg tggaggacat catacgtgtg aacgtggaca aggtcctgga gagggaccag 180  
 aagctgtcag agctggatga ccgagctgat gccttgcagg caggagcatc acaatttgag 240  
 agcagtgtctg caaagctaaa gaggaagtat tgggtggaaaa actgcaagat gatgatcatg 300  
 ctgggaacca tctgtgccat catcgtggta gttattgtaa tctacttttt tact 354

<210> 34  
 <211> 118  
 <212> PRT  
 <213> Homo sapiens

<400> 34  
 Met Ser Ala Pro Ala Gln Pro Pro Ala Glu Gly Thr Glu Gly Thr Ala  
 1 5 10 15  
 Pro Gly Gly Gly Pro Pro Gly Pro Pro Pro Asn Met Thr Ser Asn Arg  
 20 25 30  
 Arg Leu Gln Gln Thr Gln Ala Gln Val Glu Glu Val Val Asp Ile Ile  
 35 40 45



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```

Arg Val Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu
   50           55           60
Leu Asp Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu
  65           70           75           80
Ser Ser Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Cys Lys
           85           90           95
Met Met Ile Met Leu Gly Thr Ile Cys Ala Ile Ile Val Val Val Ile
          100          105          110
Val Ile Tyr Phe Phe Thr
          115

```

```

<210> 35
<211> 498
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> allele
<222> (485)...(5)
<223> n is any nucleotide

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<400> 35
gagccgcccgc cgccatcact gccgctgccca agtcctccac ccgctgcccc cgccatgtct 60
gctaccgctg ccacggcccc cctgctgcc ccggctgggg aggggtggtcc cctgcaccc 120
cctccaaacc tcaccagtaa caggagactg cagcagacc aggcccaggt ggatgaggtg 180
gtggacatca tgagggtgaa cgtggacaag gtcctggagc gagaccagaa gctgtcggag 240
ctggacgacc gtgcagatgc actccaggcg ggggcctccc agtttgaaac aagcgagacc 300
aagctcaagc gcaaatactg gtggaaaaac ctcaagatga tgatcatctt gggagtgtatt 360
tgcgccatca tcctcatcat catcatagtt tacttcagca cttaaattccc cgaggagtct 420
gccctgcta gagaagggcc tctcccccaa cctcagccg ttctccacc tctcagccat 480
atctntcagc cccccctc 498

```

```

<210> 36
<211> 384
<212> DNA
<213> Homo sapiens

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```

<400> 36
ctctggttct tccagtcccc ggtagccagc gccagtcgga gccagcgcgga gccgcccgcg 60
ccgccgtcgc cgtcactgcc tctgccaagt cactgcccc ctacccccgc catgtcggct 120
accgctgcca ccgtcccgc tgccgcccc gccggcgagg gtggccccc tgcacctcct 180
ccaaacctta ctagtaacag gagactgcag cagaccagg cccaggtgga tgagggtgagt 240
gtgtgtgtgt gtctgtgtct gtgtctatgt ctatgtatgt caaagatgca agatgatggg 300
ctggcaaata ggtgtgggag cccatcttgg gttgaaggta aagacagctt atgcttgtgg 360
gttttggtcg gagacctgcc tcat 384

```

```

<210> 37
<211> 638
<212> DNA
<213> Homo sapiens

```

```

<400> 37

```

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Exocytosis

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ctctaaacgc cgcagctgc caaaatgtct acaggtccaa ctgctgccac tggcagtaat 60
cgaagacttc agcagacaca aaatcaagta gatgaggtgg tggacataat gcgagttaac 120
gtggacaagg ttctggaaag agaccagaag ctctctgagt tagacgaccg tgcagacgca 180
ctgcaggcag gcgcttctca atttgaaacg agcgcagcca agttgaagag gaaatattgg 240
tggaagaatt gcaagatgtg ggcaatcggg attactgttc tggttatctt catcatcatc 300
atcatcgtgt gggttgtctc ttcataga accagcggaa ctcaaaactg ctgttcaaga 360
aacctcttca agacttttga cttagaacct gctatattat caagcttacc tactgttata 420
tctaaaattt tttttgtgtt aatgtaaagt tgaatttcta ggaaacgtgc ctttgttttt 480
taatatgcac tccaaattag aaggccggcc ccgtccacat tttgcacagt gcctttacag 540
atttacgtat gggctgatga agaggccttc ttaagttcca gagtgcata atctagatgt 600
aatgttgtca ctaattaatt gccattactc cccttttag 638

```

<210> 38  
 <211> 100  
 <212> PRT  
 <213> Homo sapiens

```

<400> 38
Met Ser Thr Gly Pro Thr Ala Ala Thr Gly Ser Asn Arg Arg Leu Gln
 1           5           10           15
Gln Thr Gln Asn Gln Val Asp Glu Val Val Asp Ile Met Arg Val Asn
      20           25           30
Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp
      35           40           45
Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala
      50           55           60
Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Cys Lys Met Trp Ala
      65           70           75           80
Ile Gly Ile Thr Val Leu Val Ile Phe Ile Ile Ile Ile Val Trp
      85           90           95
Val Val Ser Ser
      100

```

<210> 39  
 <211> 800  
 <212> DNA  
 <213> Homo sapiens

```

<400> 39
ctcgaggcca cgaaggccgc caggtccggt gttgggggtgt ccgagttgcc gccggagagg 60
agtggcctcg cccgcttgag ttttgattca tcatggataa tctgtcatca gaagaaattc 120
aacagagagc tcaccagatt actgatgagt ctctggaaag tacgaggaga atcctggggt 180
tagccattga gtctcaggat gcaggaatca agaccatcac tatgctggat gaacaaaagg 240
aacaactaaa ccgcatagaa gaaggcttg accaaataaa taaggacatg agagagacag 300
agaagacttt aacagaactc aacaaatgct gtggcctttg tgtctgcca tgtaatagaa 360
caaagaactt tgagtctggc aaggcttata agacaacatg gggagatggg ggagaaaact 420
caccttgcaa tgtagtatct aaacagccag gcccggtgac aaatggtcag cttcagcaac 480
caacaacagg agcagtcagt ggtggatata ttaaaccgat aactaatgat gccagagaag 540
atgaaatgga agagaacctg actcaagtgg gcagtatcct gggaaatcta aaagacatgg 600
ccctgaacat aggcaatgag attgatgctc aaaatccaca aataaaacga atcacagaca 660
aggctgacac caacagagat cgtattgata ttgccaatgc cagagcaaag aaactcattg 720
acagctaaag ctactgctgt tcttctttat catttattca cttccgtagc tcctccttga 780

```

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aagttattac cttttcagag

800

&lt;210&gt; 40

&lt;211&gt; 211

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 40

```

Met Asp Asn Leu Ser Ser Glu Glu Ile Gln Gln Arg Ala His Gln Ile
 1           5           10           15
Thr Asp Glu Ser Leu Glu Ser Thr Arg Arg Ile Leu Gly Leu Ala Ile
           20           25           30
Glu Ser Gln Asp Ala Gly Ile Lys Thr Ile Thr Met Leu Asp Glu Gln
           35           40           45
Lys Glu Gln Leu Asn Arg Ile Glu Glu Gly Leu Asp Gln Ile Asn Lys
           50           55           60
Asp Met Arg Glu Thr Glu Lys Thr Leu Thr Glu Leu Asn Lys Cys Cys
65           70           75           80
Gly Leu Cys Val Cys Pro Cys Asn Arg Thr Lys Asn Phe Glu Ser Gly
           85           90           95
Lys Ala Tyr Lys Thr Thr Trp Gly Asp Gly Gly Glu Asn Ser Pro Cys
           100          105          110
Asn Val Val Ser Lys Gln Pro Gly Pro Val Thr Asn Gly Gln Leu Gln
           115          120          125
Gln Pro Thr Thr Gly Ala Val Ser Gly Gly Tyr Ile Lys Arg Ile Thr
           130          135          140
Asn Asp Ala Arg Glu Asp Glu Met Glu Glu Asn Leu Thr Gln Val Gly
145          150          155          160
Ser Ile Leu Gly Asn Leu Lys Asp Met Ala Leu Asn Ile Gly Asn Glu
           165          170          175
Ile Asp Ala Gln Asn Pro Gln Ile Lys Arg Ile Thr Asp Lys Ala Asp
           180          185          190
Thr Asn Arg Asp Arg Ile Asp Ile Ala Asn Ala Arg Ala Lys Lys Leu
           195          200          205
Ile Asp Ser
           210

```

&lt;210&gt; 41

&lt;211&gt; 923

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 41

```

aacacaaccc tcccgagaag cccaggtcca gagccaaacc cgtcactgac cccccagccc 60
aggcgcccag ccaactcccca ccgctaccat ggccgaagac gcagacatgc gcaatgagct 120
ggaggagatg cagcgaaggg ctgaccagtt ggctgatgag tcgctggaaa gcaccgctcg 180
tatgctgcaa ctggttgaag agagtaaaga tgctggtatc aggactttgg ttatgttgga 240
tgaacaagga gaacaactcg atcgtgtcga agaaggcatg aaccatatca accaagacat 300
gaaggaggct gagaaaaatt taaaagatit agggaaatgc tgtggccttt tcatatgtcc 360
ttgtaacaag cttaaataca gtgatgctta caaaaaagcc tggggcaata atcaggatgg 420
agtgggtggc agccagcctg ctcgtgtagt ggacgaacgg gagcagatgg ccatcagtgg 480
cggcttcatc cgcagggtaa caaatgatgc ccgagaaaat gaaatggatg aaaacctaga 540

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```
gcaggtgagc ggcacatcatcg ggaacctccg tcacatggcc ctggatatgg gcaatgagat 600
cgatacacag aatcgccaga tcgacaggat catggagaag gctgattcca acaaaaccag 660
aattgatgag gccaaaccaac gtgcaacaaa gatgctggga agtgggtaag tgtgcccacc 720
cgtgttctcc tccaaatgct gtcgggcaag atagctcctt catgcttttc tcatgggtatt 780
atctagtagg tctgcacaca taacacacat cagtccaccc ccattgtgaa tgttgtcctg 840
tgtcatctgt cagcttccca acaatacttt gtgtcttttg ttctctcttg gtctctttct 900
ttccaaaggt tgtacatagt ggt 923
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<210> 42  
 <211> 206  
 <212> PRT  
 <213> Homo sapiens

<400> 42  
 Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg  
 1 5 10 15  
 Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met  
 20 25 30  
 Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val  
 35 40 45  
 Met Leu Asp Glu Gln Gly Glu Gln Leu Asp Arg Val Glu Glu Gly Met  
 50 55 60  
 Asn His Ile Asn Gln Asp Met Lys Glu Ala Glu Lys Asn Leu Lys Asp  
 65 70 75 80  
 Leu Gly Lys Cys Cys Gly Leu Phe Ile Cys Pro Cys Asn Lys Leu Lys  
 85 90 95  
 Ser Ser Asp Ala Tyr Lys Lys Ala Trp Gly Asn Asn Gln Asp Gly Val  
 100 105 110  
 Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala  
 115 120 125  
 Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn  
 130 135 140  
 Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu  
 145 150 155 160  
 Arg His Met Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg  
 165 170 175  
 Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys Thr Arg Ile  
 180 185 190  
 Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser Gly  
 195 200 205

<210> 43  
 <211> 923  
 <212> DNA  
 <213> Homo sapiens

<400> 43  
 aacacaaccc tcccgagaag cccaggtcca gagccaaacc cgtcactgac cccccagccc 60  
 aggcgcccag ccactcccca ccgctaccat ggccgaagac gcagacatgc gcaatgagct 120  
 ggaggagatg cagcgaagggt ctgaccagtt ggctgatgag tcgctggaaa gcaccgcgtcg 180  
 tatgctgcaa ctggttgaag agagtaaaga tgctggtatc aggactttgg ttatgttggga 240  
 tgaacaagga gaacaactgg aacgcattga ggaagggatg gaccaaataca ataaggacat 300

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```

gaaagaagca gaaaagaatt tgacggacct aggaaaattc tgcggggcttt gtgtgtgtcc 360
ctgtaacaag cttaaataca gtgatgctta caaaaaagcc tgggggaata atcaggacgg 420
agtgggtggc agccagcctg ctctgttagt ggacgaacgg gagcagatgg ccatcagtg 480
cggcttcac cgcagggtaa caaatgatgc ccgagaaaat gaaatggatg aaaacctaga 540
gcagggtgagc ggcacatcgc ggaacctccg tcacatggcc ctggatatgg gcaatgagat 600
cgatacacag aatcgccaga tcgacaggat catggagaag gctgattcca acaaaaccag 660
aattgatgag gccaaaccaac gtgcaacaaa gatgctggga agtgggtaag tgtgccacc 720
cgtgttctcc tccaaatgct gtcgggcaag atagctcctt catgcttttc tcatggatt 780
atctagtagg tctgcacaca taacacacat cagtcacccc ccattgtgaa tgttgtcctg 840
tgtcatctgt cagcttccca acaatacttt gtgtcttttg ttctctcttg gtctctttct 900
ttccaaaggt tgtacatagt ggt 923

```

<210> 44  
 <211> 206  
 <212> PRT  
 <213> Homo sapiens

```

<400> 44
Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg
  1           5           10           15
Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met
          20           25           30
Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val
        35           40           45
Met Leu Asp Glu Gln Gly Glu Gln Leu Glu Arg Ile Glu Glu Gly Met
        50           55           60
Asp Gln Ile Asn Lys Asp Met Lys Glu Ala Glu Lys Asn Leu Thr Asp
 65           70           75           80
Leu Gly Lys Phe Cys Gly Leu Cys Val Cys Pro Cys Asn Lys Leu Lys
          85           90           95
Ser Ser Asp Ala Tyr Lys Lys Ala Trp Gly Asn Asn Gln Asp Gly Val
          100          105          110
Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala
          115          120          125
Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn
          130          135          140
Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu
          145          150          155          160
Arg His Met Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg
          165          170          175
Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys Thr Arg Ile
          180          185          190
Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser Gly
          195          200          205

```

<210> 45  
 <211> 2088  
 <212> DNA  
 <213> Homo sapiens

```

<400> 45
catgaaggac cgaaccagg agctccgcac ggccaaggac agcgatgatg atgatgatgt 60

```

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```

cgctgtcacc gtggaccgag accgcttcat ggatgagttc tttgagcagg tggaggagat 120
tcgaggcttc attgacaaga tcgcagagaa cgtggaggag gtgaagcgga agcacagtgc 180
catcctggca tcccccaacc ccgatgagaa gacgaaggag gagctggaag aactcatgtc 240
cgacataaag aagacagcaa acaaagttcg ttccaagtta aagagcatcg agcagtccat 300
cgagcaagag gaaggcctga accgctcctc cgctgacctg aggatccgga agacacagca 360
ctccacgctg tccagaaagt ttgtggagggt catgtcggag tacaacgcca cgcagtccga 420
ctaccgcgag cgctgcaaag gccgcattcca gaggcagctg gagatcaccg gcaggaccac 480
gaccagttag gagctggagg acatgctgga gagtgggaac cccgccatct ttgcctctgg 540
gatcatcatg gactccagca tctcgaagca ggctctgagc gagattgaga cgcggcacag 600
tgagatcatc aagctggaga acagcatccg tgagctacac gacatgttca tggacatggc 660
catgctcgtg gagagccagg gagagatgat tgacaggatc gagtacaatg tggaaacgcg 720
ggtagactat gtggagaggg ccgtgtctga caccaagaag gccgtcaagt accagagcaa 780
ggcgcgccgg aagaaaatca tgatcatcat ctgctgtgtg atcctgggca tcgtcatcgc 840
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Glu Asn Val Glu Glu Val Lys Arg Lys His Ser Ala Ile Leu Ala Ser
          50          55          60
Pro Asn Pro Asp Glu Lys Thr Lys Glu Glu Leu Glu Glu Leu Met Ser
65           70           75           80
Asp Ile Lys Lys Thr Ala Asn Lys Val Arg Ser Lys Leu Lys Ser Ile
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Glu	Gln	Ser	Ile	Glu	Gln	Glu	Glu	Gly	Leu	Asn	Arg	Ser	Ser	Ala	Asp
			100					105					110		
Leu	Arg	Ile	Arg	Lys	Thr	Gln	His	Ser	Thr	Leu	Ser	Arg	Lys	Phe	Val
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Glu	Val	Met	Ser	Glu	Tyr	Asn	Ala	Thr	Gln	Ser	Asp	Tyr	Arg	Glu	Arg
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Cys	Lys	Gly	Arg	Ile	Gln	Arg	Gln	Leu	Glu	Ile	Thr	Gly	Arg	Thr	Thr
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Thr	Ser	Glu	Glu	Leu	Glu	Asp	Met	Leu	Glu	Ser	Gly	Asn	Pro	Ala	Ile
				165					170					175	
Phe	Ala	Ser	Gly	Ile	Ile	Met	Asp	Ser	Ser	Ile	Ser	Lys	Gln	Ala	Leu
			180					185					190		
Ser	Glu	Ile	Glu	Thr	Arg	His	Ser	Glu	Ile	Ile	Lys	Leu	Glu	Asn	Ser
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Ile	Arg	Glu	Leu	His	Asp	Met	Phe	Met	Asp	Met	Ala	Met	Leu	Val	Glu
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Val	Asp	Tyr	Val	Glu	Arg	Ala	Val	Ser	Asp	Thr	Lys	Lys	Ala	Val	Lys
				245					250					255	
Tyr	Gln	Ser	Lys	Ala	Arg	Arg	Lys	Lys	Ile	Met	Ile	Ile	Ile	Cys	Cys
			260					265					270		
Val	Ile	Leu	Gly	Ile	Val	Ile	Ala	Ser	Thr	Val	Gly	Gly	Ile	Phe	Ala
		275					280					285			